

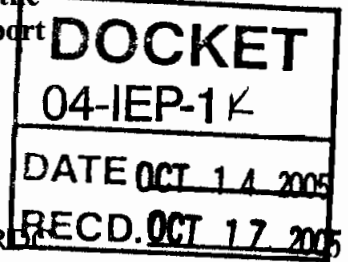
**Comments of the Natural Resources Defense Council (NRDC) on the  
2005 Integrated Energy Policy Report (IEPR) Draft Committee Report**

Docket Number 04-IEP-1K

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Submitted by:

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The Natural Resources Defense Council (NRDC) appreciates the opportunity to offer these comments on the California Energy Commission's (CEC) *2005 Integrated Energy Policy Report (IEPR)* Draft Committee Report. NRDC is a non-profit membership organization with a long-standing interest in minimizing the societal costs of the reliable energy services that Californians demand. We focus on representing our more than 130,000 California members' interest in receiving affordable energy services and reducing the environmental impact of California's electricity consumption.

NRDC commends the IEPR Committee for effectively condensing the results of an intensive public process of workshops leading up to this draft IEPR. While there is much that we can praise about the draft IEPR, we focus our comments on our suggestions for improvements for the final IEPR. Our comments are organized first by a summary of the highlights of our comments, followed by our comments on the proposed greenhouse gas performance standard, and finally more detailed comments on particular chapters of the draft IEPR.

## **Highlights of NRDC Comments**

The following provides a summary of NRDC's comments, highlighting the items we believe should be included among the CEC's top priorities. Further detail about each can be found later in this document.

### **1. Protecting the environment should be recognized as one of California's primary energy policy goals.**

The Executive Summary of the IEPR currently describes the state's energy policy goals as: "ensuring adequate, affordable, and reliable energy." (p. E-2) One essential policy goal is missing: protecting the environment. This goal is expressed repeatedly throughout the legislation requiring the IEPR (Senate Bill 1389, Statutes of 2002, Chapter 568), and is prominently featured in the recently-adopted Energy Action Plan II, which states: "Our overarching goal is for California's energy to be adequate, affordable, technologically advanced, and environmentally-sound." We urge the CEC to correct this oversight in the IEPR by revising the sentence on page E-2 to read: "...to meet the state's policy goal of ensuring adequate, affordable, and reliable, and environmentally-sound energy services" and revising other similar passages in the IEPR (for example, page E-11).

## **2. Adopt the Greenhouse Gas Performance Standard without offsets.**

NRDC strongly supports the Greenhouse Gas Performance Standard proposed in the draft IEPR and further described in Chairman Desmond's memorandum dated September 22, 2005. This policy is needed both to achieve the Governor's GHG reduction targets and to protect Californians from the significant financial risks associated with additional investments in highly carbon-intensive generating technologies. We oppose the use of offsets to meet the standard because allowing for offsets would greatly diminish the risk mitigation benefits of the policy and discourage the investments in advanced technologies that are needed to achieve the Governor's long-term reduction targets. NRDC urges the CEC to:

- Adopt the full Greenhouse Gas Performance Standard described in Chairman Desmond's memorandum (page 6), without any provisions for offsets, in the final IEPR; and
- Summarize the Greenhouse Gas Performance Standard in the Executive Summary of the IEPR. We recommend inserting the following paragraph on page E-3 after the first paragraph:

The future costs and risks associated with greenhouse gas and other emissions from new fossil-fuel generation facilities are of vital interest to California retail electricity suppliers and ratepayers. Because California should not burden interstate commerce or discriminate against particular technologies or fuels, the state should specify a greenhouse gas performance standard which applies to all energy resources, both in-state and out-of-state, both coal and non-coal. Prior to the adoption of mandatory limits on GHG emissions, California should minimize potentially significant reliability and cost risks by avoiding more long-term investments (exceeding 3-5 years in duration) in baseload power plants with emissions per megawatt-hour of greenhouse gases and criteria air pollutants exceeding those of a combined-cycle natural gas turbine. If and when a system of mandatory limits on greenhouse gas emissions consistent with the state's GHG emission reduction targets becomes effective, decisions on new long-term commitments to fossil-fueled generation to meet the state's needs should be made in compliance with that system.

## **3. Commit to adopting energy saving targets for the publicly-owned utilities, and to work with them to ensure that California meets its statewide energy saving targets.**

To meet the statewide energy saving targets, the immediate priority of the state should be to ensure that the publicly-owned utilities (POU) contribute at least a proportional share of the savings. Although the state's investor-owned utilities have recently made significant progress in capturing all cost-effective energy efficiency through the CPUC process, the POUs have not made similar advances. In order to meet the statewide energy saving targets, the POUs must provide about one-quarter of the energy savings, representing an *eight-fold* increase from the energy savings they currently report. The energy savings targets are the cornerstone of the state's efforts to provide customers with affordable energy services and to meet the Governor's GHG reduction targets. NRDC urges the CEC to:

- Emphasize the need for POUs to increase energy efficiency efforts as the top priority item in the IEPR's section on energy efficiency, beginning on page 56;

- Provide a more detailed discussion of the POUs current energy efficiency efforts and what would be needed to meet the statewide energy savings targets (p. 60);
- Provide more detail on how the CEC will work with the POUs to meet the statewide energy saving goals. We recommend the following revisions to page 60:

In order to meet the state's overall energy saving goals, the Energy Commission should work collaboratively with POUs to (i) establish goals consistent with those adopted for IOUs, by the end of 2006; (ii) remove the financial disincentives the POUs currently face with respect to energy efficiency by decoupling their revenues from sales; (iii) integrate energy efficiency into POU resource procurement and expand investments in cost-effective energy efficiency; and (iv) ramp up POU energy efficiency programs to reach their full cost-effective potential.

- Highlight the need for increased POU efficiency efforts in the Executive Summary. We recommend that the following passage be added as the second paragraph under the subheading "Electricity" on page E-4:

While the investor-owned utilities have recently made significant progress in capturing all cost-effective energy efficiency through the CPUC process, the publicly-owned utilities (POUs) have not made similar advances. In order to meet the state's energy saving targets, the POUs must significantly increase investments in cost-effective energy efficiency. These energy saving targets are the cornerstone of the state's efforts to provide customers with affordable energy services and to meet the Governor's GHG reduction targets. The Energy Commission should work collaboratively with the POUs to establish goals consistent with those adopted for IOUs by the end of 2006, to remove the financial disincentives to energy efficiency investments which the POUs currently face by decoupling their revenues from sales, to integrate energy efficiency into POU resource procurement and expand investments in cost-effective energy efficiency, and to ramp up POU energy efficiency programs to reach the full cost-effective potential.

#### **4. Commit to performing true resource planning through portfolio analysis of resource fuel types.**

The CEC data requests of the state's load-serving entities (LSEs) used to inform the current draft IEPR did not yield meaningful information about future anticipated fuel types ("generic fossil resources" are not further specified). The CEC is in a unique position to evaluate the state's total resource plan and the total environmental footprint of California's electricity consumption, since it could aggregate the information provided by individual LSEs into a statewide perspective of California's energy future. Without an analysis of the different resource fuel types that the LSEs may see in their competitive solicitations or may consider building (i.e., natural gas, conventional coal, IGCC, etc.), the LSE's plans provide little useful information about the likely future composition of California's electricity mix, or the costs, risks and environmental impacts that customers can expect. In order to better inform state energy policy, NRDC urges the CEC to:

- Direct that all future IEPRs collect projected future resource fuel type data from all LSEs, such that supply outlooks will yield informative analyses of the fuel types of generating capacity that are likely to be developed and deployed (given current

policies and fuel price forecasts) to meet California's electricity needs over the next decade, the total cost of various portfolio scenarios, and the associated changes in emissions of GHGs, criteria pollutants and mercury.

- At a minimum, recommend that the CPUC require the IOUs to perform the resource fuel type analyses we have outlined above in the utilities' long-term procurement proceeding submissions.

## **5. Include air and water quality protections in plans to increase the use of alternative fuels.**

NRDC commends the state for planning to develop a "workable long-term plan" by March of next year to reduce gasoline and diesel consumption and increase the use of alternative fuels. **It is critical that such a plan include protections for the state's air and water quality. The CEC should work closely with the State Air Resources Board and Water Resources Control Board to ensure that a plan provided to the Governor can be implemented in a way that does not compromise public health or the state's environment.** NRDC understands the urgent need to reduce the state's dependence on petroleum; however, actions taken by the state must not trade-off petroleum dependence for environmental quality and public health. NRDC is encouraged by the IEPR's recommendation to expand the use of E-85 in California. Initial assessments show that E-85 avoids the air quality issues associated with low blends of ethanol, such as E-10. Additionally, NRDC urges the state to support in-state ethanol production from cellulosic feedstocks. Cellulosic ethanol can greatly increase the environmental, economic, and national security benefits of alternative and renewable fuels strategies.

## **Proposed Greenhouse Gas Performance Standard**

NRDC applauds the CEC for proactively proposing a greenhouse gas performance standard to guide the state's energy future by sending a clear indication to the resource development community regarding the characteristics of resources in which California intends to invest. Significant thought and effort clearly went into the proposed policy, and we greatly appreciate the Commission's attention to this urgent matter.

### **1. NRDC strongly supports the proposed greenhouse gas performance standard for long-term generation investments.**

The draft IEPR, responding to guidance from the Governor, proposes a statewide policy governing long-term generation investments:

because of the severe projected in-state impacts, California has a special interest in avoiding the consequences of severe climate change and compelling motivation to reduce [greenhouse gases] GHGs. Without burdening interstate commerce or discriminating against particular technologies or fuels, the state should specify a GHG performance standard to be applied to all utility procurement, both in-state and out-of-state, both coal and non-coal. While more specific recommendations

must await the January 2006 report of Governor Schwarzenegger's Climate Action Team, the Energy Commission recommends that any GHG performance standard for utility procurement be set no lower than levels achieved by a new combined-cycle natural gas turbine. Additional consideration is needed before determining what role, if any, GHG emission offsets should play in complying with such a performance standard. (Draft IEPR, p. 71)

On September 22, Chairman Desmond issued a memorandum entitled "IEPR Greenhouse Gas Performance Standard," which offers additional information and proposes additional details in support of the draft IEPR standard:

The Governor's top priorities for resource development, as indicated in his response to the Energy Commission's Energy Policy Reports, are energy efficiency and renewable energy resources. When California utilities and other retail electricity providers are considering new long-term investments in fossil-fueled generation, concerns properly arise regarding future costs and risks associated with greenhouse gas and other emissions from such facilities. The following policies could provide a balance of long run goals and near term progress.

**1. Specify Greenhouse Gas Performance.** Recognizing costs, risks and the state's overall greenhouse gas reduction and energy resource commitments, limits on greenhouse gas emissions can be achieved through performance goals and targets. Because California should not burden interstate commerce or discriminate against particular technologies or fuels, it should specify a greenhouse gas performance standard which it applies to all energy resources, both in-state and out-of-state, both coal and non-coal:

- i. If and when a system of mandatory limits on greenhouse gas emissions consistent with the state's GHG emission reduction targets becomes effective in California, through any combination of state, regional and federal action, decisions on new long-term commitments to fossil-fueled generation to meet the state's needs should be made in compliance with that system, including any associated rules for trading emissions to minimize the costs of reductions. California is now exploring such options through the Governor's Climate Action Team.
- ii. Prior to the adoption of such limits, California should act to minimize potentially significant reliability and cost risks by avoiding more long-term investments (exceeding 3-5 years in duration) in baseload power plants with emissions per megawatt-hour of greenhouse gases and criteria air pollutants exceeding those of a combined cycle natural gas turbine. (p. 6)

NRDC strongly supports the policies proposed by Chairman Desmond, and we urge the CEC to adopt them in the final IEPR. These policies are needed both to achieve the Governor's GHG reduction targets and to protect Californians from the significant financial risks associated with

additional investments in highly carbon-intensive generating technologies. The CEC has received substantial evidence in this proceeding that currently-available technologies utilizing conventional fuel sources will allow California to meet this proposed GHG performance standard, enabling the state to meet its overriding goal of providing affordable, reliable and environmentally sensitive energy services to its residents and businesses over the coming decades.

Conventional coal-fired power plants present the most serious financial risk in the face of potential carbon dioxide (CO<sub>2</sub>) regulation, because of their higher emissions. For example, a new conventional coal plant will emit more than twice as much CO<sub>2</sub> per MWh as a new combined cycle natural gas plant. A 500 MW coal plant's emissions would result in approximately \$50 million *per year* in cost exposure for a utility and its customers, assuming that carbon dioxide emissions cost only \$12 per ton.

Moreover, any new investments in conventional coal-fired plants would seriously jeopardize the state's ability to meet the Governor's GHG targets. Consider just the proposed Granite Fox Power Project across the border in Nevada, one of many proposed coal-fired generators that would burn pulverized coal (and seeks California buyers). This single facility would produce about 10 million tons of carbon dioxide every year, compared to annual emissions from *all California sources* of about 410 million tons in the year 2000.<sup>1</sup> The 1450 MW coal-burner's annual emissions would be equivalent to adding about two million passenger vehicles to California roadways. To put it another way: in less than six months of operation, Granite Fox would cancel the last ten years worth of cumulative carbon dioxide savings from SDG&E's award-winning energy efficiency programs (about four million tons).

A prudent risk mitigation strategy for California absolutely requires avoiding new long-term commitments to excessively carbon-intensive power plants. California can mitigate the financial risk associated with GHG emissions, help meet the Governor's GHG targets, and further diversify the state's energy system by utilizing the Energy Action Plans' top priority resources, such as energy efficiency and renewable energy, as well as currently-available technologies such as Integrated Gasification Combined Cycle (IGCC) plants with carbon capture and storage. The proposed policy will provide a clear signal to the market to encourage further innovation in and development of low-carbon technologies that meet the state's multiple policy objectives.

## **2. The greenhouse gas performance standard should *not* permit the use of offsets for compliance.**

Chairman Desmond's memorandum requested comments on whether power plant sponsors should be permitted to use emissions offsets procured from other sources to meet the GHG performance standard discussed above, and if so, what standards and verification systems should be established to govern offsets used for compliance purposes. NRDC strongly opposes the use of emissions offsets to meet the GHG standard, because it would greatly weaken or even eliminate the benefits that the proposed investment policy would provide to California.

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<sup>1</sup> California Energy Commission, "Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2002 Update," Staff Paper, Publication CEC-600-2005-025, June 2005, p. 21.

**A. Offsets would jeopardize the GHG performance standard's ability to reduce California's exposure to future costs and risks associated with greenhouse gas emissions.**

One of the primary purposes of the proposed policy, as described in Chairman Desmond's memorandum, is to protect California from future costs and risks associated with greenhouse gas emissions. The best way to ensure that California electricity consumers' financial risk exposure is reduced as a result of their investments is to reduce the emissions for which California electricity consumers are *directly* accountable. It is unknown whether offsets would be recognized or would provide value to California if and when a broader regional or national policy to reduce GHG emissions is implemented. Using offsets to comply with the proposed GHG standard would be like taking out an insurance policy with only a partial chance that the insurance benefits would materialize when needed.

**B. Allowing offsets to meet the proposed GHG standard would blunt the policy's impact on technology innovation and significantly mute California's message to the resource development community.**

Chairman Desmond's memorandum convincingly states that California must clearly articulate its procurement policies in order to spur advanced technologies and to shape its own energy future:

Although California is communicating its existing loading order policy to the west, it needs to develop and refine its greenhouse gas emissions policies (both existing and new policy initiatives below) and make a concerted effort to communicate it. The extent to which California clearly articulates its procurement policies will be an important factor in determining what types of technologies are constructed throughout the west. This is an essential element in maximizing the opportunity to shape near and intermediate term technology commercialization and resource development in the west. (p. 4)

The proposed GHG performance standard provides a clear and unambiguous statement of California's procurement policy. Allowing for the use of offsets to meet the standard would clearly blunt the policy's impact on technology innovation and significantly mute California's message to the resource development community. An offsets policy would provide mixed messages – on the one hand asking for investments in low-emitting technologies while on the other hand allowing "business as usual" investments in conventional coal plants to continue. Only an unambiguous statement of California policy will yield the desired advances in technologies to secure California's energy future.

**C. No mechanism exists to ensure that offsets provide the desired GHG reductions.**

No credible, effective mechanism for verifying offsets exists that can ensure they represent emission reductions that are additional relative to a business as usual scenario. In the absence of binding limits and implementation rules, quality control on offsets is uncertain and will thereby reduce the climate benefits of such a policy. NRDC urges the CEC to adopt the proposed GHG performance standard *without* any use of offsets.

- 3. A clear statement of California's GHG performance requirements is urgently needed to ensure that resource development underway throughout the west meets California's policy goals.**

With dozens of new conventional coal-fired power plants in the planning and development stage throughout the west, many aiming to sell into the California market, the urgency of the CEC's proposed GHG performance standard cannot be emphasized enough. By sending a clear signal to the market with the GHG performance standard, California can ensure that resources are developed consistent with the state's own vision of its energy future.

## **Executive Summary and General Report Comments**

- 1. Protecting the environment should be recognized as one of California's primary energy policy goals.**

The Executive Summary of the IEPR currently describes the state's energy policy goals as: "ensuring adequate, affordable, and reliable energy." (p. E-2) One essential policy goal is missing: protecting the environment. This goal is expressed repeatedly throughout the legislation requiring the IEPR (Senate Bill 1389, Statutes of 2002, Chapter 568), and is prominently featured in the recently-adopted Energy Action Plan II, which states: "Our overarching goal is for California's energy to be adequate, affordable, technologically advanced, and environmentally-sound." We urge the CEC to correct this oversight in the IEPR by revising the sentence on page E-2 to read: "...to meet the state's policy goal of ensuring adequate, affordable, and reliable, and environmentally-sound energy services" and revising other similar passages in the IEPR (for example, page E-11).

- 2. The IEPR Executive Summary, as well as the entire IEPR, should reflect the state's energy policy, which treats energy efficiency as a resource.**

Many sections of the IEPR, particularly the beginning of the Executive Summary, are heavily focused on supply-side options. Although energy efficiency is the first priority resource in California's "loading order," and is discussed in the report, it is not featured right up front in the Executive Summary. We urge the CEC to more prominently discuss that energy efficiency is the state's top priority resource. For example, on page E-1 we suggest the following addition to the fourth paragraph:

"While the state's aggressive deployment of energy efficiency as the top priority resource is helping to significantly moderate demand growth and lower customer bills, the development of new energy supplies is not keeping pace..."

In addition, we urge the CEC to make the following addition to the fourth paragraph on page E-2:

"California is addressing its long-term electricity needs first by capturing all cost-effective opportunities to use energy more efficiently. California must also address..."

As is now legislatively mandated by SB1037, utilities are required to invest in all cost-effective energy efficiency before other alternatives.



### **3. Coal, along with natural gas, is a primary energy resource of concern.**

Much of the IEPR's Executive Summary and the remainder of the IEPR focus on the concern about over-reliance on natural gas. For example, the first paragraph opens the IEPR with, "California's way of life is threatened by its growing dependence on oil and natural gas..." (p. E-1) However, California and the IEPR should be as seriously concerned about coal. As the IEPR later states, "The overall increase in gas prices over the past several years has sparked a renewed interest in coal-fired electricity generation." (p. 109) Looming commitments to coal-fired power from the western states could figure prominently in California's future energy mix.

As the IEPR later notes with the proposed Greenhouse Gas Performance Standard, the global warming contributions of these planned coal plants cannot be overlooked. California's ecology and economy will be directly impacted by global warming, as the CEC discusses in Chapter 9. In addition, the state's consumers face the financial risk of being tied in to long-term contracts which will prove costly in the event of likely future regulation of carbon dioxide emissions. Just like the price volatility risk of natural gas, the financial risk of coal-fired electricity is a serious risk. The IEPR must be sensitive to risks from various fuel sources, and NRDC recommends that this and similar sections in the report reflect the serious concerns presented by the state's current and possible future reliance on coal.

### **4. The role of publicly-owned utilities (POUs) in achieving the state's energy efficiency goals should be highlighted.**

Given its important role in guiding the entire state's energy course, the IEPR should strongly emphasize the indispensability of POUs in "help[ing] California reach its goal of a reduction in per capita electricity use" (Energy Action Plan II, p. 4) and highlight the need for increased POU efficiency efforts in the Executive Summary. We recommend that the following passage be added as the second paragraph under the subheading "Electricity" on page E-4:

While the investor-owned utilities have recently made significant progress in capturing all cost-effective energy efficiency through the CPUC process, the publicly-owned utilities (POUs) have not made similar advances. In order to meet the state's energy saving targets, the POUs must significantly increase investments in cost-effective energy efficiency. These energy saving targets are the cornerstone of the state's efforts to provide customers with affordable energy services and to meet the Governor's GHG reduction targets. The Energy Commission should work collaboratively with the POUs to establish goals consistent with those adopted for IOUs by the end of 2006, to remove the financial disincentives to energy efficiency investments which the POUs currently face by decoupling their revenues from sales, to integrate energy efficiency into POU resource procurement and expand investments in cost-effective energy efficiency, and to ramp up POU energy efficiency programs to reach the full cost-effective potential.

### **5. The IEPR's recommendations should be made explicitly clear.**

Recommendations within the report should be clearly indicated so they will be easy for policymakers to find. Currently, the recommendations are embedded in the text, which

makes them difficult to identify. Although some sections include a distinct recommendations section, not all of the recommendations mentioned in the section text are included in the recommendations section. The report should highlight its recommendations so that they can easily be found and acted upon.

## Chapter 1: Introduction

- Page 2 – We suggest revising the second paragraph on this page to read as follows: “The state has made some limited progress toward the goals in the *2003 Energy Report* and the *2004 Energy Report Update*, primarily in the investor-owned utility efficiency programs and natural gas infrastructure. Much more remains to be done, especially among the publicly-owned utilities.” As described further below, much remains to be done among the POUs.

## Chapter 2: Transportation Fuels

NRDC commends the state for its commitment to develop a “workable long-term plan” by March of next year to reduce gasoline and diesel consumption and increase the use of alternative fuels. **It is critical that such a plan include protections for the state’s air and water quality, and the CEC should work closely with the State Air Resources Board and Water Resources Control Board to ensure that a plan provided to the Governor can be implemented in a way that does not compromise public health or the state’s environment.** NRDC understands the urgent need to reduce the state’s dependence on petroleum; however, actions taken by the state must not trade-off petroleum dependence for environmental quality and public health.

The Transportation Fuels section of the IEPR provides an extensive list of strategies that should be considered in the development of the plan. Below are suggestions on some of those strategies.

### 1. Renewable fuel standards must protect air and water quality.

A year-round gasoline standard that fulfills the minimum of 10 percent renewable content with ethanol fails to protect air quality. The IEPR acknowledges that the use of low blends of ethanol in gasoline increases NOx and permeation VOCs. A means of mitigating these emissions must be devised before adopting a mandatory E-10 standard. A renewable diesel strategy must also be devised to protect air and water quality. By establishing a single renewable fuel standard for the state, more flexibility is provided for meeting renewable content targets without compromising environmental quality or public health. An aggregate RFS target can be met through the combination of high blends and low blends with adjusted volumes to ensure no degradation in air quality.

NRDC recommends removing the following two strategies:

- Establish a Renewable Diesel Fuel Standard so that all diesel fuel sold in California contains up to 20 percent renewable content. The Energy Commission and the CARB also should conduct a study and prepare recommendations aimed at increasing the renewable content of fuel to greater than 20 percent.
- Establish a California Renewable Gasoline Fuel Standard so that all gasoline sold in California contains a minimum of 10 percent renewable content.

NRDC recommends inserting the following strategy:

- Establish a California Renewable Fuel Standard with specific targets for renewable fuel use that (1) optimize the environmental and public health benefits of renewable fuel production and use through reductions in criteria air pollutants, toxics, greenhouse gases, and water pollutants consistent with existing or future state board regulations and (2) ensure that there is no net material increase in air pollution, water pollution, or any other substances that are known to damage human health.

## **2. A lifecycle assessment of alternative fuels is needed before authorizing their use.**

All production and use emissions including criteria air pollutants, air toxics, GHGs, water pollutants, and other environmental and public health impacts should be considered. The state must also manage individual emission reductions required by the state implementation plans to meet attainment rules and other state board regulations. The ‘pollutant portfolio’ approach, described in the IEPR for verifying alternative fuels, ignores these requirements. California still has some of the worst air quality in the country and the state struggles to find even small reductions in NO<sub>x</sub>. It is uncertain that the state can withstand increases in NO<sub>x</sub> from gasoline-powered cars and trucks and offset those increases with NO<sub>x</sub> reductions elsewhere. Therefore, it is prudent to prevent NO<sub>x</sub> increases from vehicle emissions. Furthermore, the portfolio approach concept is too vague. Different pollutants affect the air and water and our bodies in different ways, and pollutants are therefore assigned different reactivities and concentration or dose limits; it is unclear from the portfolio approach how the differing impacts of each pollutant and their interactions would be handled. Therefore, NRDC recommends removing the following strategy:

- Apply a “pollutant portfolio” approach for verifying alternative fuels under the CARB’s programs. With this approach the total net reduction benefits across the entire suite of emissions, rather than a single focus on NO<sub>x</sub> reductions or increases, could be measured and used for comparison with non-petroleum fuels.

## **3. The update of the Predictive Model through a public process should continue to move forward.**

The IEPR suggests changes to the Predictive Model to incorporate the ‘pollutant portfolio’ approach because it is thought to be too focused on NO<sub>x</sub> reductions. The Predictive Model, however, predicts emissions of NO<sub>x</sub>, exhaust hydrocarbons, evaporative hydrocarbons, exhaust potency-weighted toxics, evaporative benzene, and exhaust CO. CARB is already working to update the model so that it will include new data, new statistical techniques and, perhaps most significantly, the ozone-formation effects of permeation. Therefore, NRDC recommends removing the following strategy:

- Examine the feasibility of incorporating the emissions portfolio approach into the Predictive Model so that acceptance of a given fuel formulation is based more broadly on total emissions instead of solely upon its NOx contribution.
4. **NRDC is encouraged by the IEPR’s recommendation to expand the use of E-85 in California.**

Initial assessments show that E-85 avoids the air quality issues associated with low blends of ethanol. Additionally, when ethanol is produced in-state from cellulosic feedstocks, the environmental, economic, and national security benefits of the fuel are much more pronounced. We suggest that the CEC also consider encouraging automakers to produce E85 vehicles that meet PZEV emission standards. NRDC recommends the following additions:

- Establish a process to expand the use of E-85 in California by: 1) developing and certifying E-85-compatible fuel dispensing systems; 2) implementing a process to expedite the permitting of E-85 stations; 3) investigating the feasibility of requiring all or a portion of new cars sold in California to be FFVs; 4) establishing a collaborative state/industry working group to identify fuel infrastructure changes needed to increase production and distribution of E-85 gasoline and prepare a strategic/business plan to exploit opportunities to incorporate E-85 into the existing retail fueling system; 5) sponsoring a consumer notification and education program promoting the availability of FFVs and E-85 fuel; 6) evaluating incentive programs in other states to determine their applicability and usefulness for creating an E-85 retail infrastructure in California; 7) encourage automakers to develop and market E-85 flexible fuel vehicles that meet PZEV standards; and 8) ~~7~~-supporting research for the development of technologies to convert biomass resources to ethanol.

## **Chapter 3: Electricity Needs and Procurement Policies**

1. **True resource planning through portfolio analysis of future resource fuel types must be performed to assess California’s possible future energy mix and to ensure that the state meets its public policy objectives.**

NRDC strongly urges the CEC to commit to collecting fuel type projections from all load-serving entities (LSEs) for the next IEPR and performing an analysis of these resource fuel types and assessment of the state’s projected energy mix. The CEC, as the state’s primary energy policy and planning agency, should hold the responsibility of analyzing the state’s future energy mix. This type of energy portfolio analysis is not currently performed as part of the CEC’s supply outlook reports, but examining the possible scenarios of California’s future energy path is essential.

The absence of this data makes it difficult to analyze the long-term economic and environmental characteristics of California’s electricity system – analysis which is critically needed and serves the public interest. As the Draft IEPR noted, “it is not clear that anyone is adequately considering the cumulative long-term economic impact on ratepayers.” (p. 51) Analysis of future fuel type projections is absolutely necessary to be able to determine the long-term

economic effect on California, since different fuel types will have different costs, benefits, and financial and environmental risks. These are highly relevant questions within the context of a long-term planning document such as the IEPR, but they are left unanswered by the lack of fuel-specific resource projections. Coordination between CEC staff from the Electricity Assessment Office and Environmental Office could help provide the necessary analytic skills needed to perform this type of analysis.

Statewide resource mix projections also have important implications for California's ability to meet the Governor's aggressive greenhouse gas reduction goals and to comply with the loading order contained in the Energy Action Plan, which specifies that clean fossil-fueled generation is preferred before other fossil fuel-based alternatives. We clarify from our previous comments regarding this topic that we request that the CEC perform this analysis specific to resource fuel types for the electric sector.

Figure 6 on page 33 of the draft IEPR shows a graph of the relative contributions of various fuel sources to California's electricity mix. As pointed out in the text preceding the graph, Governor Schwarzenegger has emphasized the need for a more diverse portfolio of energy resources. However, currently the state does not have a way of examining what the current electricity fuel mix may look like in the future, given current policies, and whether it will be diverse enough or whether new policies are needed. Statewide portfolio analysis would be a means of providing this likely vision of the future.

We emphasize that this analysis would not entail specific predictions of the future; rather it would be a *projection* of likely scenarios. Though California's future generation profile is uncertain and thus difficult to predict, this unpredictability does not justify the absence of fuel-type projections (i.e., generic capacity additions of natural gas, conventional coal, IGCC, etc.). The same can be said of natural gas prices, which are notoriously difficult to predict but are nonetheless a critical component of any utility analysis of future electricity system characteristics. Much as a natural gas forecast informs utility planning decisions, a forecast of capacity additions by fuel type informs statewide policy planning and allows the CEC and other agencies to assess whether policy changes are needed to meet California's energy and environmental goals. While it would of course be premature for LSEs to evaluate the probability of procuring individual projects, it is reasonable to expect that LSEs possess the ability to project aggregate capacity additions by resource fuel type under different scenarios. The CEC's subsequent aggregation of this fuel type projection data across all the LSEs will yield an informative picture of the state's potential future energy portfolio.

We also urge the CEC to recommend that the CPUC perform this future resource fuel type analysis for the IOUs in the upcoming procurement proceeding. The application of the GHG adder (which reflects only the financial risk of future carbon regulation) to the IOUs' long term plans and procurement is helpful, but is not a sufficient tool for evaluating all the future risks of different fuel types. We clarify that the CEC's own statewide analysis, in addition to the analysis done at the CPUC, is necessary to get a complete picture of the state's energy portfolio. The CPUC has direct jurisdiction only over the IOUs, and the fuel mix of the remaining quarter of the state's energy providers is also necessary to examine; responsibility for this analysis lies with the CEC.

**2. NRDC urges the CEC to clarify in the IEPR and CPUC *Transmittal Report* how energy efficiency is accounted for in the demand forecast.**

It is essential that the state's energy forecast be explicit about its assumptions regarding accounting of energy efficiency efforts. We recognize that CEC staff has decided not to include post-2008 savings from IOU energy efficiency programs that will fulfill the CPUC's energy saving goals through 2013, since funding beyond 2008 has not yet been approved and it is possible that the goals will be modified. We are concerned with this approach, since the CPUC goals represent current state policy, and we believe they should be included as a line item subtracted from the demand forecast. And as a result of the CEC's decision not to include post-2008 savings, we are concerned that the CEC demand forecast reflects a higher projection of energy consumption than should be expected with the CPUC goals, and may miscommunicate the need for additional supply-side resources to the market.

We recommend that, at the very least, the IEPR explicitly state its assumptions regarding the treatment of all energy efficiency programs and codes and standards in the demand forecast. We also recommend that the IEPR acknowledge and discuss the contributions of energy efficiency in lowering future energy demand in the state and the impact on needed supply-side additions, even if post-2008 savings are not incorporated in the demand forecast. Similarly, this information should also be included in the CEC's *Transmittal Report* to the CPUC. Specifically, we recommend the following:

- **Clarify if public goods charge (PGC) funded energy efficiency savings are included in the post-2008 demand forecast.** Since the PGC is legislatively mandated through 2011 and will *not* change during this time, it effectively serves as a minimum floor for efficiency investments during this timeframe. However, it is unclear from the text of the IEPR whether no efficiency savings at all are included past 2008, or whether only PGC-funded savings are included similar to the 2003 IEPR.
- **Clarify if future code updates are included in the demand forecast.** California's building and appliance efficiency standards have been paramount to the state's energy efficiency success and will continue to play a critical role in the future. The CEC has just begun work on updates to the Title 24 building efficiency standard that is scheduled to go into effect in 2008. As work will continue in the future to continually update the standards, these projected savings should also be accounted for as discussed in the context of the need for new generation.
- **Explicitly recognize energy efficiency's anticipated role in meeting growing energy demand.** We recommend adding the following to the end of the Electricity Demand section on page 37:  
Nevertheless, a substantial portion of the state's increasing energy demand is expected to be met by energy efficiency. Although the CPUC's energy saving goals for the IOUs may be revised in the future, the current goals will result in energy efficiency savings that will meet over half of the IOUs' projected growth in energy consumption.<sup>2</sup>

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<sup>2</sup> CPUC Decision 04-09-060.

**3. The IEPR should provide a clear statement regarding the expected new energy supplies which the state will need, once energy efficiency is accounted for.**

In order to best inform decisions about new needs for additional energy supplies, the IEPR should clearly enumerate the resource additions which the CEC envisions are necessary for the state, given what is currently known. Page 42 of the IEPR states that 24,000 MW of peak resources will needed to be procured by 2016. However, this number is not very informative, since it includes expiring contracts (which do not necessarily constitute retirements). It is unclear whether the statement in the next paragraph, “load is anticipated to grow by about 4,000 MW,” is a more accurate reflection of new supply needs, after accounting for the energy efficiency that will meet part of growing demand.

**4. Future IEPRs should perform analyses of bill forecasts and not just rate forecasts.**

We urge the CEC to commit that future IEPRs will perform analyses of bill forecasts to determine the true energy expenditure impacts on consumers, in addition to rate forecasts. Like the Natural Gas section on page 110, the analysis of electricity rates should also focus on bills. Although electric rates in California are “among the highest in the nation” (p. E-1 and 32), an overemphasis on rates can provide an incomplete look at the actual effect on the state’s consumers. Increased energy efficiency will in fact result in lower energy bills. The importance of looking at bills in addition to rates is also supported by the CPUC in Decision 05-09-043, issued on September 22, 2005, which approves the IOUs’ 2006-2008 energy efficiency portfolios and budgets:

“The overall impact of the programs is that customer bills will decrease relative to the level without the energy efficiency programs. This is evident in the more than \$2.5 billion in net benefits that the programs will provide, which translates into reduced utility revenue requirements and lower bills for customers.” (p. 50)

**5. Although California’s energy demand is now growing, it is not outpacing the growth seen prior to the 2001 crisis.**

Page 32 states that “California’s demand is now growing” and page 34 states that the state’s energy consumption growth rate exceeds what was forecast in the 2003 IEPR. Although it is true that energy consumption in the state is growing now at a rate faster than in the previous few years, this growth is not unprecedented. As seen in Form 1.1a in the Revised Demand Forecast, annual growth rates from 2004 to 2016 are projected to be less than half of the growth rate experienced in the 1980s.

## Chapter 4: Demand-Side Resources, Distributed Generation and Other Electricity Supplies

### Energy Efficiency

1. **NRDC urges the CEC to commit to adopting energy saving targets for the publicly-owned utilities, and to work with them to ensure that California meets its statewide energy saving targets.**

To meet the statewide energy saving targets, the immediate priority of the state should be to ensure that the publicly-owned utilities (POU) contribute at least a proportional share of the savings. Although the state's investor-owned utilities have recently made significant progress in capturing all cost-effective energy efficiency through the CPUC process, the POUs have not made similar advances. In order to meet the statewide energy saving targets, the POUs must provide about one-quarter of the energy savings, representing an *eight-fold* increase from the energy savings they currently report. The energy savings targets are the cornerstone of the state's efforts to provide customers with affordable energy services and to meet the Governor's GHG reduction targets. NRDC urges the CEC to:

- a. Emphasize the need for POUs to increase energy efficiency efforts as the top priority item in the IEPR's section on energy efficiency, beginning on page 56;
- b. Provide a more detailed discussion of the POUs current energy efficiency efforts and what would be needed to meet the statewide energy savings targets (p. 60);
- c. Provide more detail on how the CEC will work with the POUs to meet the statewide energy saving goals. We recommend the following revisions to page 60:

In order to meet the state's overall energy saving goals, the Energy Commission should work collaboratively with POUs to (i) establish goals consistent with those adopted for IOUs, by the end of 2006; (ii) remove the financial disincentives the POUs currently face with respect to energy efficiency by decoupling their revenues from sales; (iii) integrate energy efficiency into POU resource procurement and expand investments in cost-effective energy efficiency; and (iv) ramp up POU energy efficiency programs to reach their full cost-effective potential.

- d. Highlight the need for increased POU efficiency efforts in the Executive Summary. We recommend that the following passage be added as the second paragraph under the subheading "Electricity" on page E-4:

While the investor-owned utilities have recently made significant progress in capturing all cost-effective energy efficiency through the CPUC process, the publicly-owned utilities (POUs) have not made similar advances. In order to meet the state's energy saving targets, the POUs must significantly increase investments in cost-effective energy efficiency. These energy saving targets are the cornerstone of the state's efforts to provide customers with affordable energy services and to meet the Governor's GHG reduction targets. The Energy Commission should work collaboratively with the POUs to establish goals consistent with those adopted for IOUs by the end of 2006, to remove the financial disincentives to energy efficiency investments which the POUs currently face by decoupling their revenues from sales,



to integrate energy efficiency into POU resource procurement and expand investments in cost-effective energy efficiency, and to ramp up POU energy efficiency programs to reach the full cost-effective potential.

**2. California’s energy efficiency efforts must focus on *both* baseload and peak power, since energy efficiency is a long-term resource for the state.**

The draft IEPR makes an incorrect assertion in stating that “Energy efficiency programs must meet specific cost-effectiveness rules, typically measured by energy savings for each dollar spent, which can drive efficiency program focus on energy savings rather than peak savings.” (p. 58) In fact, the CPUC’s performance metric for evaluating energy efficiency programs is net benefits based on the Total Resource Cost, which does value peak savings through the newly adopted avoided costs methodology (CPUC Decision 05-04-024, April 2005).

The issue of balancing the IOUs’ efficiency portfolios between peak and baseload measures was well vetted in the CPUC’s proceeding surrounding the IOUs’ 2006-08 efficiency portfolio applications. After many discussions and a case management statement indicating areas of agreement and disagreement among the parties, the final CPUC Decision 05-09-043 found in its Findings of Fact 15-16:

15. Energy efficiency should continue to target both baseload and peak loads, within the context of our overriding goal to pursue all cost-effective energy efficiency opportunities over both the short- and long-term. TURN’s insistence that we hold up approval of the portfolio plans until funds are redirected towards residential space cooling applications ignores this context.

16. TURN’s recommendations focus too narrowly on the perspective that measures with low load factors should take precedence over higher load factor measures—even if those higher load factor measures can reduce demand during critical peak hours and can do so cost-effectively.

Moreover, the PUC’s decision presents a process to ensure that the avoided costs fully reflect the value of “critical peak” and directs the utilities to expand their programs focusing on peak savings as fast as possible. The CEC should not seek to reargue this issue through the IEPR. Instead, the CEC staff should continue working collaboratively with the PUC to ensure that as much cost-effective peak demand savings as possible are captured.

**3. Additional Comments**

- Page 56 – “These initiatives, principally mandatory efficiency standards, will continue to provide increased savings over time.” In fact, as shown by graphs in the CEC loading order staff paper (CEC-400-2005-043, July 2005), mandatory standards have been responsible for roughly half of the state’s historic EE savings, and utility programs have delivered the other half. We recommend modifying this sentence to read: “These initiatives, including mandatory efficiency standards and utility efficiency programs, will continue to provide increased savings over time.”

- Page 56 – We recommend updating as follows the last sentence in the third paragraph in the Energy Efficiency section to reflect the recent September 22, 2005 approval by CPUC of IOU EE funding for 2006-08: “To achieve these goals, the CPUC significantly increased IOU energy efficiency funding to \$823 million for 2004-2005, and has approved funding for the 2006-2008 programs of \$1.98 billion for electricity and natural gas efficiency programs.”
- Page 60 – NRDC supports the need for POU data on energy efficiency. Moreover, it is now required by SB 1037. However, the purpose of collecting this information is not just “to allow comparison with other energy efficiency programs in the state,” but also to assess if the state is meeting its overall efficiency goals and to work with the POUs to meet their targets.

## **Demand Response**

### **1. We urge the CEC to recommend that any consideration of dynamic pricing options should ensure that they do not cause an increase in overall energy consumption.**

NRDC believes that providing customers with price signals that more accurately reflect the cost of providing electricity can be an important step to helping customers make rational decisions about their electricity use. However, as the California agencies recognize in the EAP, even with demand response programs in place, energy efficiency programs must remain a vital part of the utilities’ resource portfolio, representing the top priority procurement resource. While demand response could complement and enhance energy efficiency efforts, ensuring that the synergy between the two resources is realized will necessitate careful consideration of the impacts of one on the other and a concerted effort to integrate the two strategies.

NRDC is concerned that default dynamic pricing tariffs could potentially result in *increases* in overall energy consumption if off-peak rates are significantly low. The current tiered rate electricity bill structure provides customers with an incentive for energy efficiency and conservation; the higher rates for greater overall electricity consumption sends a clear price signal to consumers to conserve and ensures that customers see real bill savings from investments in energy efficiency. On the other hand, certain types of dynamic pricing structures that focus only on reducing peak electricity usage, such as TOU rates, can result simply in load shifting to the times of day when electricity is cheaper, rather than encouraging reductions in total energy use. Indeed, the final impact evaluation of the Statewide Pricing Pilot reported that “the reduction in energy use during high-price periods was almost exactly offset by increases in energy use during off-peak periods” (p. 7). Other pricing designs may result in increases in overall consumption, which clearly would have negative environmental consequences and would contradict the EAP’s energy efficiency objectives. In addition, a recent UC Energy Institute report found that, due to the generation profile in the western region, real-time pricing could actually increase pollution emissions.<sup>3</sup>

However, some types of dynamic pricing structures, such as critical peak pricing, could potentially work in combination with the tiered rate structure to encourage customers to conserve and invest in overall energy efficiency while also encouraging customers to reduce peak demand.

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<sup>3</sup> Holland, Stephen P. and Erin T. Mansur, “Is Real-Time Pricing Green?: The Environmental Impacts of Electricity Demand Variance,” Center for the Study of Energy Markets Working Paper (CSEM WP 136), University of California Energy Institute, August 2004.

Given these concerns, NRDC urges the CEC to recommend in the IEPR that any dynamic pricing structures that are eventually adopted do not increase overall energy consumption. We recommend inserting the following paragraph on page 61 after the third paragraph in the Demand Response section:

- While critical peak pricing could potentially reduce both peak and overall energy consumption, evidence suggests that default dynamic pricing tariffs could potentially result in increased overall energy use. Default dynamic rates which focus only on reducing peak electricity usage, such as time-of-use rates, may simply shift load to off-peak hours while providing no incentive to reduce total electricity use. Dynamic pricing structures that result in increased total use of electricity have negative environmental implications and would clearly be inconsistent with the state Energy Action Plan's energy efficiency objectives. Therefore, it is essential that any dynamic pricing structures that are eventually adopted do not increase overall energy consumption, and complement the state's vitally important energy efficiency goals.

### **Advanced Coal Technologies**

#### **1. Clarify that the GHG adder was set by the CPUC at \$8 per ton CO<sub>2</sub>, *escalated at 5% per year.***

In Decision 05-04-024 in April 2005, the CPUC adopted a value for the GHG adder equal to an initial cost of \$8 per ton of CO<sub>2</sub> in 2004, which is then escalated at five percent per year. We recommend modifying the sentence on page 68 as follows:

- The CPUC's 2004 long-term procurement decision raised concerns about the financial risk of future greenhouse gas (GHG) regulation, and requires California's IOUs to include an \$8 per ton CO<sub>2</sub> adder, escalated at five percent per year, in evaluating procurement contracts over five years in length.

#### **2. NRDC urges the CEC to adopt the proposed GHG performance standard *without* offsets.**

NRDC strongly supports the Greenhouse Gas Performance Standard proposed in the draft IEPR and further described in Chairman Desmond's memorandum dated September 22, 2005. This policy is needed both to achieve the Governor's GHG reduction targets and to protect Californians from the significant financial risks associated with additional investments in highly carbon-intensive generating technologies. At the same time, we strongly oppose the use of offsets to meet the standard, because it would greatly weaken or even eliminate the benefits that the proposed standard would provide to the state. Therefore, we urge the CEC to adopt the full Greenhouse Gas Performance Standard described in Chairman Desmond's memorandum (page 6) without any provisions for offsets. Further details on our opposition to offsets, along with additional comments on the proposed Greenhouse Gas Performance Standard, are elaborated in a previous section of these comments.

## Chapter 7: The Challenges and Possibilities of Natural Gas

### **1. Additional cost-effective natural gas efficiency opportunities still remain, and the state should act quickly to capture this remaining potential.**

NRDC commends the IEPR staff for including a section on natural gas efficiency in this chapter, and we support the statement on page 111: “Increased efficiency in all of the state’s energy sectors is the highest priority for meeting demand, consistent with the state’s loading order policy.”

However, despite the aggressive natural gas efficiency goals established by the CPUC, which will double annual natural gas savings by 2008 and triple them by 2013, there remains substantially more cost-effective natural gas savings beyond those included in the CPUC targets. Natural gas efficiency efforts have traditionally lagged behind those of the electric sector. Though the CPUC goals have stepped up those efforts, the CPUC’s goals represent just 40 percent of the maximum achievable potential identified in the most recent studies of natural gas efficiency potential.<sup>4</sup> With today’s significantly higher wholesale prices, the cost-effective potential for natural gas efficiency is likely much higher now than previously suggested. Capturing this additional natural gas efficiency potential should be of utmost importance to the state; after all, efficiency is the fastest and cheapest way to help lower customer bills and hedge against rising gas prices. NRDC recommends that the CEC include the following recommendation on page 112 at the end of the “Using Efficiency Measures to Reduce Demand” subsection:

Although the CPUC’s natural gas efficiency goals are quite aggressive, they only represent about 40 percent of the maximum achievable cost-effective potential identified in the most recent studies of natural gas efficiency potential. In order to capture the significant remaining potential, the CEC will work with the CPUC to ramp up its natural gas efficiency programs as fast as possible beyond the current targets and increase the savings goals during the next revision. Given the high gas prices California is currently experiencing, the cost-effective natural gas efficiency potential is likely much higher now than was previously estimated, and the state must act as quickly as possible to capture these savings and protect ratepayers from high bills.

### **2. NRDC urges the CEC to clarify in the IEPR and CPUC Transmittal Report how energy efficiency is accounted for in the natural gas demand forecast.**

Like our comments on the electric demand forecast, we also recommend that the natural gas demand forecast be explicitly clear about its assumptions regarding accounting of energy efficiency efforts. Though the *Revised Reference Case in Support of the 2005 Natural Gas Market Assessment* states that it “reflects an extension of currently known conditions rather than a forecast of future events” (p. 2), it is not clear if the IOUs’ 2006-08 natural gas efficiency programs are included at a minimum – or the CPUC energy savings goals through 2013 – in the

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<sup>4</sup> CPUC Decision 04-09-060, p. 3.

forecast, nor if future code updates are factored in. Accounting for these savings should be parallel to the electric demand forecast.

### 3. Additional Comments

- Pages E-8 and 111 – The CPUC-approved IOU investments in natural gas efficiency should be updated. The CPUC recently approved more than \$300 million for the IOUs over the 2006-2008 program cycle, representing an annual average increase of \$45 million beyond the approved funding for 2005.

## Chapter 8: Integrating Water and Energy Strategies

We commend the CEC for examining the water-energy link. These are two of the most critical resource issues facing California, and the IEPR provides much appreciated insight into the relationships between water and energy. Clearly, there are substantial energy saving benefits from water efficiency programs, and we commend the CEC staff for initiating one of the first comprehensive attempts to quantify the connection between water savings and energy savings. We offer some specific recommendations below:

- **We strongly support the IEPR recommendation to collaborate with other agencies to explore energy saving opportunities in the water sector, and particularly to integrate these savings into the IOUs' 2006-08 energy efficiency portfolios.** We suggest that this recommendation should also encourage publicly-owned utilities (POU) to integrate water and energy efficiency into their energy efficiency portfolios.
- **We urge the CEC to clarify Table 5 on page 130,** which shows energy savings from water use efficiency. However, it is not clear what energy savings are included in the third column. Since the IOU energy efficiency programs already include on-site energy savings associated with water efficiency, it would be helpful to understand the magnitude of additional savings that could be obtained through “off-site” energy use associated with water conservation.
- **We urge the CEC, in collaboration with the CPUC, to conduct the research necessary to address the energy savings associated with the water delivery chain (pumping, conveyance, etc.).** The research should identify embedded energy savings in water efficiency specifically by location so that IOU energy efficiency programs can “count” the savings. We suggest that this recommendation be formally included in the IEPR.
- **The IEPR should discuss the advantages of decoupling water utility revenues from sales.** The implementation of decoupling for the state’s energy IOUs has been a key to their energy efficiency success and to California’s nationwide leadership on energy efficiency. Removing the disincentive for efficiency investments for water utilities – both public and private – could also launch California’s water efficiency programs to the forefront of the nation and achieve even greater energy savings for the state.

## Chapter 9: Global Climate Change

NRDC commends the CEC for highlighting the issue of climate change, one of the most pressing issues of our time, in the IEPR. We commend staff for a very helpful and timely update to the *Inventory of California Greenhouse Gas Emissions*, especially the inclusion of the emissions from out-of state power, which is responsible for 50 percent of the CO<sub>2</sub> caused by California's electricity consumption. Our specific recommendations are as follows:

**1. The CEC should examine future CO<sub>2</sub> emissions under different resource scenarios, both in the next IEPR and in the CPUC's procurement proceeding.**

As we discussed above, we urge the state to do portfolio analyses of future resource fuel types; as part of this analysis we recommend that the scenarios help to illuminate possible trajectories of CO<sub>2</sub> emissions, and the impacts of various policies on emissions. These portfolio analyses are necessary to help policy-makers understand the portfolio implications of individual utility resource decisions. These analyses should help answer questions such as:

- What would future emissions look like if all of California's incremental baseload needs over the next decade were met with conventional coal plants?
- What would the impact on emissions be if the state adopted the proposed greenhouse gas performance standard for new generation?
- How would emissions trajectories change if the POUs were able to attain savings that are commensurate with those now achieved by the IOUs, and what would be the additional impact of more aggressive investment in renewable energy?
- What policies or resource investments would help or hinder achievement of the Governor's greenhouse gas reduction targets?

**2. The IEPR should urge all LSEs to account for the financial risk associated with GHG emissions.**

To protect customers from the financial risk associated with GHG emissions, the CPUC developed the "GHG adder" and requires the IOUs to use the "adder" in their long-term planning and procurement. However, all LSEs and their customers in California are exposed to this financial risk, not just IOU customers. The CEC should urge all LSEs to account for the financial risk associated with GHG emissions.

**3. The CEC should use the GHG adder in evaluating the cost-effectiveness of codes and standards.**

California's building and appliance efficiency standards help avoid costly investments in new power plants, thus minimizing the financial risk that would accompany building fossil-fueled power plants. The CEC should use the GHG adder in estimating the overall cost-effectiveness of codes and standards, similar to the CPUC's use of the GHG adder in the avoided costs for energy efficiency programs.

#### **4. Additional Comments**

- Page 133 – On this page at the very least, the footnotes for this chapter seem to be off. For example, footnote 174 in the text seems like it should be associated with footnote number 176.
- Page 134 – In the “Introduction” section, credit should also be given to energy efficiency programs, as well as California’s building and appliance standards, for helping establish California as a leader in per capita GHG emissions.